

ToxRefDB

Toxicity Reference Database

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



Overview

Chemical Coverage

- Food-use Pesticide Active Ingredients
 - Undergo full suite of toxicity testing

Source Data

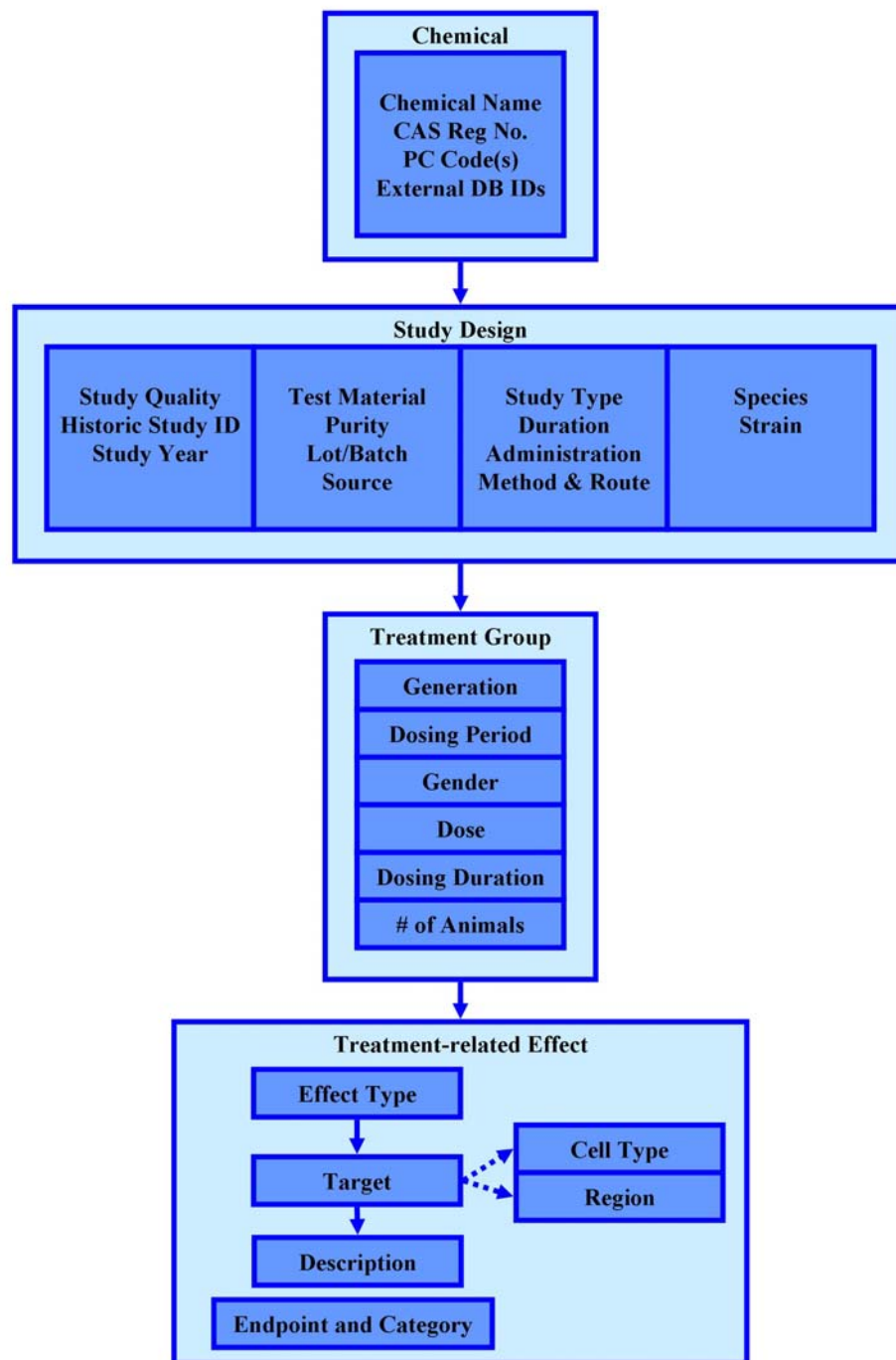
- Data Evaluation Records (DER)
 - Reviews of Industry-Submitted *In Vivo* Toxicity Studies

Database

- ToxRefDB
 - Relational Data Model
 - Fully Standardized Vocabulary

Application

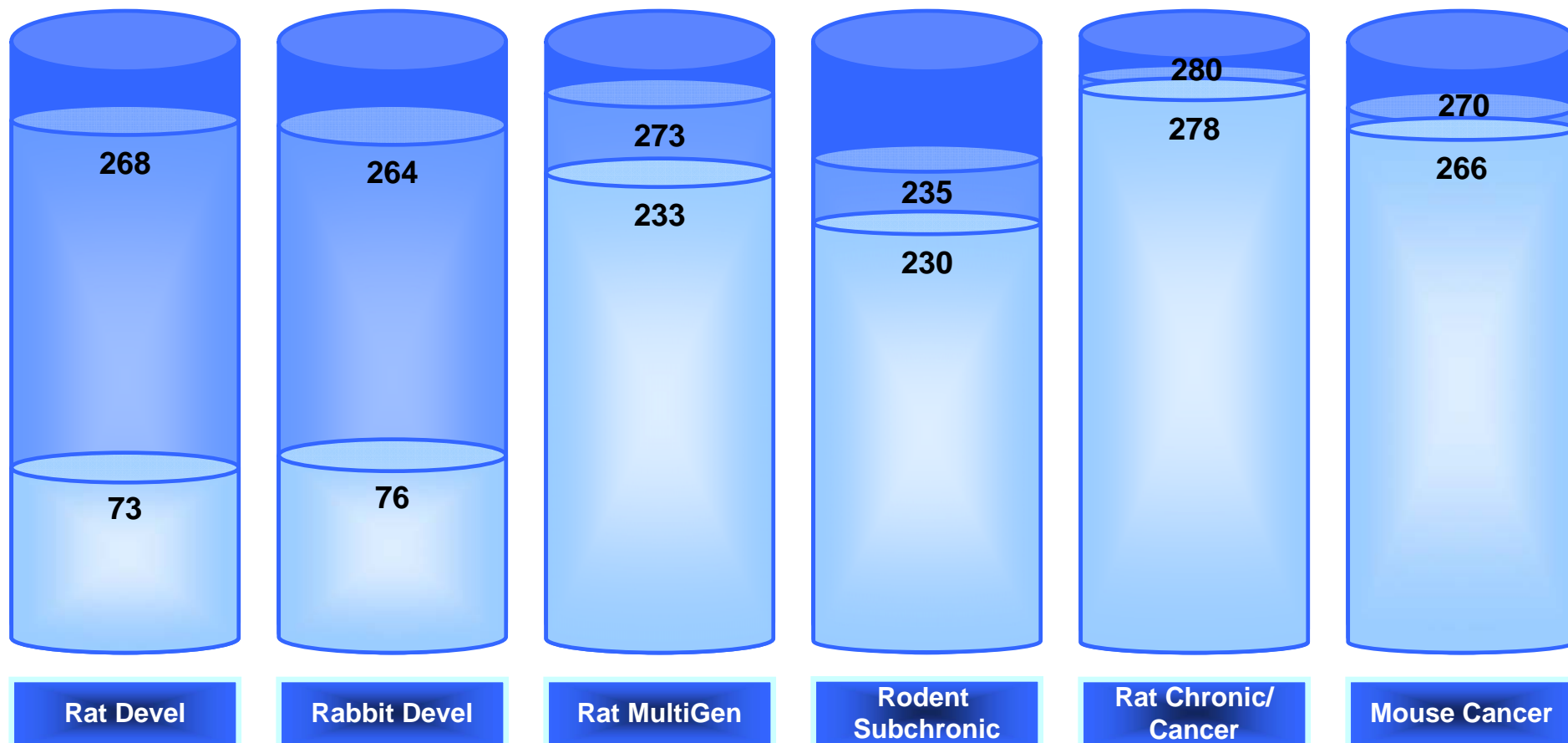
- Retrospective Analysis
- Chemical Classification



Data Entry Status

ToxCast Phase I Chemicals

Total: 291 Pesticides



Summary Statistics

Subchronic Rat, Chronic/Cancer Rat, and Cancer Mouse Studies

	Chemicals	Studies	Treatment Groups	Treatment Groups with Effects	Effects ^a	Unique Effects ^b	Critical Effects ^c	Unique Critical Effects ^d
Total	334	831	9,466	4,431	31,427	1,287	4,865	601
Subchronic Rat	236	251	2,179	1,370	11,796	623	1,739	314
Chronic/Cancer Rat	281	300	4,228	1,721	12,215	870	1,822	359
Cancer Mouse	266	280	3,059	1,340	7,416	639	1,304	275

(a) - Total number of effect type, target, and description combinations assigned to any treatment group (e.g., Pathology (Neoplastic) | Liver | Adenoma)

(b) - # of distinct effects assigned to any treatment group

(c) - Effects that are criteria for establishing the systemic LOAEL

(d) - # of distinct critical effects assigned to any treatment group

ToxRefDB Effect Distribution in Chronic/Cancer Rat Studies

- Novel relationships between effects can be observed and calculated
- Toxicity data format conducive to linking HTS and genomic data
- Multiple attributes for looking at toxicity data
 - By chemical(s)
 - By study type(s)
 - By effect(s)
 - By species
 - By dose

